

Interactive comment on “HCl and ClO profiles inside the Antarctic vortex as observed by SMILES in November 2009: comparisons with MLS and ACE-FTS instruments” by T. Sugita et al.

Anonymous Referee #1

Received and published: 29 August 2013

1st Review of manuscript entitled “HCl and ClO profiles inside the Antarctic vortex as observed by SMILES in November 2009: comparisons with MLS and ACE-FTS instruments” by Sugita et al. for possible publication in Atmos. Meas. Tech. The paper compares HCl, ClO, HCl/Cl_y, and Cl_y from SMILES in the Antarctic vortex in late November 2009 to MLS and ACE-FTS. Two different level 2 SMILES data retrieval products are included. The paper is a worthwhile validation effort that will be valuable to the scientific community. The paper is adequately illustrated, includes proper citations, and is generally well written. The paper is suitable for publication after the following minor revisions.

C2297

General Comments:

Wordy. Be more concise. Limit the use of parentheses.

Figures:

Include approximate altitude axes on the right side of every figure that has PT as the y-axis.

Text:

Abstract:

Mention that SMILES is on the ISS.

Line 16: change “smaller” to “lower”

Maintain present tense, i.e., change “was” to “is” in multiple places.

Provide differences for HCl and ClO in both concentration and percent.

Include quantitative agreement between SMILES, MLS, and ACE HCl/Cl_y ratios.

Reword last sentence. Something like “The high HCl values and HCl/Cl_y ratios observed by the three instruments in the lower stratospheric Antarctic vortex is consistent with previous observations in late austral spring.”

1. Introduction:

Add a paragraph outlining the paper at the end.

2. Measurements of SMILES – consider changing to “Satellite Measurements”

Add Section 2.1 SMILES, 2.2 MLS, 2.3 ACE-FTS. Move text from beginning of Methods section (page 10) back into the Measurement sections.

3. Method

Begin this section talking about the vortex and Derived Meteorological Products.

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Page 12, Last Paragraph: Elaborate on the effect of differences in LST on HCl and ClO comparisons.

Interactive comment on Atmos. Meas. Tech. Discuss., 6, 6729, 2013.

C2299